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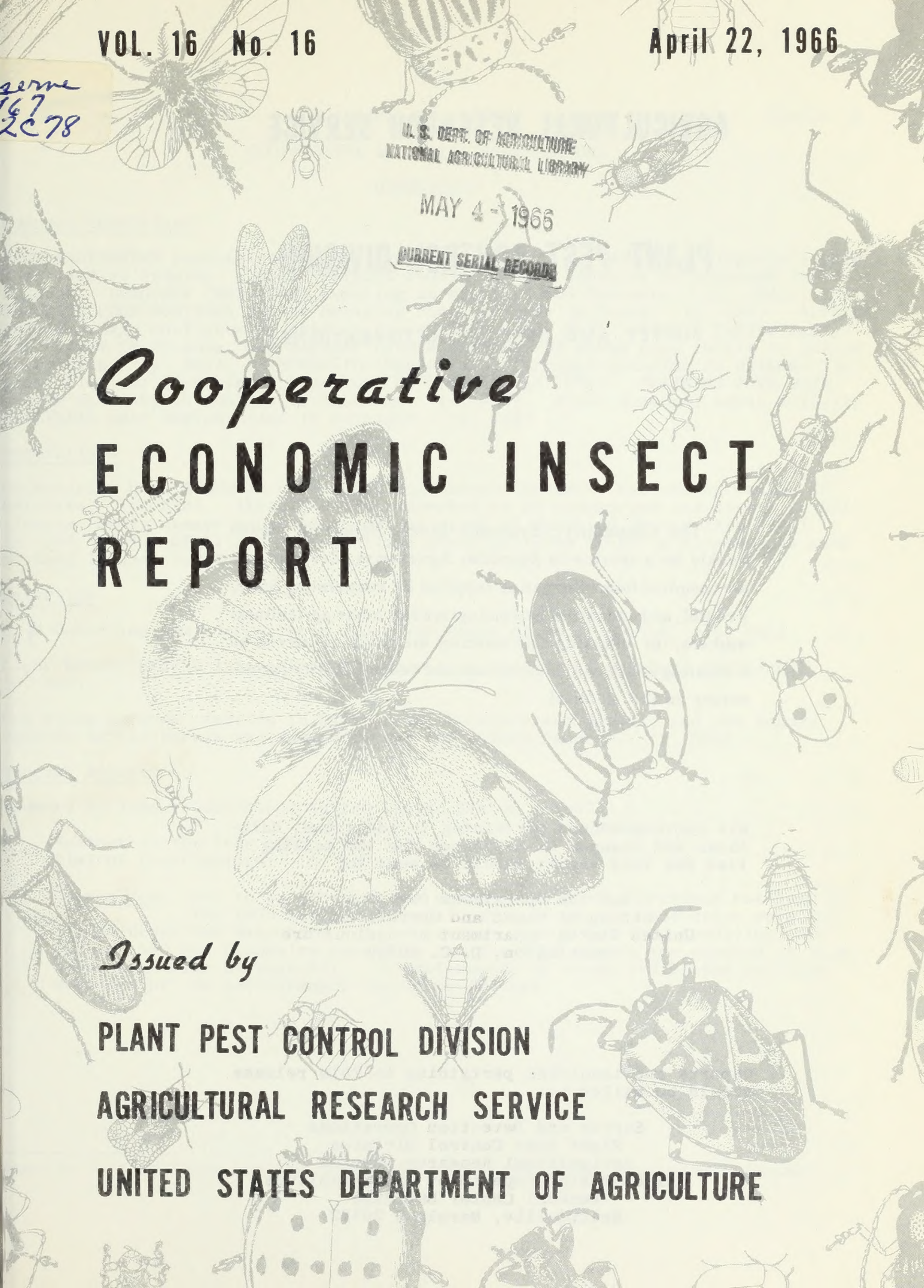

Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 16 April 22, 1966 Number 16

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

BEET LEAFHOPPER populations higher than past 2 years in Idaho and slightly higher than 1965 in Wyoming. POTATO PSYLLID requiring some controls on potatoes in Arizona. EUROPEAN CORN BORER pupating in Maryland and Delaware. (p. 333). SOUTHERN CORN ROOTWORM larvae damaging roots of corn in Texas. (p. 334). ALFALFA WEEVIL damage continues in several areas. (pp. 334, 335). CITRUS THRIPS damaging citrus in Arizona, and EASTERN LUBBER GRASSHOPPER poses some threat to citrus in Florida. (p. 339). A MOSQUITO (*Mansonia perturbans*) annoying in Gainesville area, Florida; first large emergence of season. (p. 341). NORTHERN FOWL MITE medium to heavy on poultry in Arkansas. (p. 342). First seasonal adult activity of CEREAL LEAF BEETLE noted in Michigan. (p. 343).

Predictions

Potentially high EUROPEAN CORN BORER population indicated for coming season in Delaware. (p. 333). ALFALFA WEEVIL expected to be widespread and severe in California; heavy damage expected in all sections of Maryland during late April. (p. 334, 335). GYPSY MOTH infestations expected to be heavy in Nissequogue area of Long Island, New York. (p. 343).

Detection

▶ Detection Reminder - Three Important Pests of Small Grains. (p. 346).

Light KHAPRA BEETLE infestation discovered in feedlot in Brawley, California. (p. 345).

New State records reported in California, Delaware and Hawaii, and new county records in California and Missouri, and new Island records. (p. 345).

Special Reports

Summary of Insect Conditions in the United States - 1965

Weather of the Year 1965. (p. 348).
List of Contributors. (p. 350).

Correction: Due to an error in the preparation of the previous sections of the 1965 summary material, many of the Vermont notes were included under New Hampshire. In an attempt to correct this condition, the Vermont and New Hampshire summaries for the 1965 season are carried in this issue beginning on page 351. All references to these two States in other sections of the 1965 summary should be deleted.

Reports in this issue are for week ending April 15 unless otherwise indicated.

CONTENTS

Special Insects of Regional Signigicance....................333

Insects Affecting

Corn, Sorghum, Sugarcane........333
Small Grains....................334
Forage Legumes..................334
Cotton..........................336
Tobacco.........................336
Sugar beets.....................336
Potatoes, Tomatoes, Peppers.....336
Cole Crops......................337
Deciduous Fruits and Nuts.......338
Citrus..........................339
Small Fruits....................339
General Vegetables..............339
Ornamentals.....................339
Forest and Shade Trees..........340
Man and Animals.................341
Households and Structures.......342
Stored Products.................342

Hawaii Insect Report....................337
Beneficial Insects....................342
Federal-State Plant Protection Programs....................343
Status of the Screw-worm in the Southwest....................344
Corrections....................345
Some First Appearances of Season....................345
Insect Detection....................345
Detection Reminder - Three Important Pests of Small Grains....................346
Light Trap Collections....................347

Summary of Insect Conditions in the United States - 1965

Weather of the Year 1965........348
List of Contributors............350

Summary of Insect Conditions in Vermont and New Hampshire....................351

WEATHER BUREAU'S 30-DAY OUTLOOK

MID-APRIL TO MID-MAY 1966

Temperatures are expected to average above seasonal normals from the Rockies to the Applachians and also in the Far Southwest. Below normal averages should be confined to the Pacific Northwest and the south Atlantic Coastal States while near normal temperatures are anticipated in unspecified areas. Precipitation is expected to be subnormal over the eastern fourth of the Nation except for near normal amounts in Florida and along the south Atlantic Coast. Subnormal totals

Weather continued on page 354.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

BEET LEAFHOPPER (Circulifer tenellus) - IDAHO - Survey for overwintering adults begun March 21 not complete, but populations in Saylor Creek, Glenns Ferry and Mountain Home areas, Elmore County, much higher than past 2 years. Host plant populations about same. Some drying of plants occurring; may reduce nymphal populations. Preliminary estimates indicate more than 20,000 acres need spraying for suppression if situation remains same. Nymphal surveys will be conducted during May to determine extent of chemical control needed. (Evans). WYOMING - Cooperative survey conducted on wasteland adjacent to sugar-beet areas of southern Big Horn and Washakie Counties. Total of 2,140 square-foot samples of weed host areas yielded 513 specimens; average 0.24 per square foot. Population slightly larger than in 1965, when average of 0.23 per square foot found. Kochia and annual mustards dominant host plants. Annual mustards much more abundant than in previous years. (Lowry et al.). COLORADO - Ranged 1-2 per 100 sweeps in weed hosts in Mesa County sugar beets. (Bulla).

CORN LEAF APHID (Rhopalosiphum maidis) - ARIZONA - Increase continues on small grains in Pinal County; light to moderate with an occasional heavily infested field. (Ariz. Coop. Sur.). NEW MEXICO - Heavy on barley in Luna County. (Elson). TEXAS - Light to medium and increasing on small grains throughout Denton County (Turney).

GREENBUG (Schizaphis graminum) - TEXAS - Moderate to heavy on wheat near McKinney, Collin County, March 25. Currently medium to heavy and widespread on wheat throughout Denton County; averaged about 50 per foot of drilled row in wheat throughout Kaufman County. (Turney). Present in most wheat throughout panhandle; damage generally light. Declining in Bell County. (Parker). OKLAHOMA - Decreasing rapidly in most areas. Danger of damage appears over in northwest and north central areas; spraying almost stopped. Decrease due to wheat beginning to joint and rapid increase of parasites and predators. Counts in Perkins area, Payne County, nearing zero. Ranged 0-120 per linear foot in Major, Alfalfa, Logan and Payne Counties; 50-100 in Washington County. (Okla. Coop. Sur.).

POTATO PSYLLID (Paratrioza cockerelli) - ARIZONA - First and second instars becoming more numerous in potato areas of Pinal and Maricopa Counties. Controls necessary in some fields. (Ariz. Coop. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEW MEXICO - Light in two alfalfa fields of 30 checked in Chaves County. Majority winged adults. (Mathews, Nielsen). OKLAHOMA - Averaged 40 per 10 sweeps in alfalfa in Kiowa County, 10 per square foot of crown in Beckham County. Very light in Payne and Alfalfa Counties. (Okla. Coop. Sur.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - State average of 118 live borers per 100 stalks represents estimated 56 percent survival of overwintering borers based on fall population of 209 borers per 100 stalks. This third consecutive year in which spring populations have increased since 1963; indicates potentially high borer population for coming season. Pupation of overwintering borers 20 percent in Sussex County; no pupation noted in Kent and New Castle Counties. (Burbutis). MARYLAND - Pupation inside cornstalks underway April 14 in Wicomico County. (U. Md., Ent. Dept.). WISCONSIN - Larvae apparently overwintered well and observations in southwest showed better than 84 percent survival. Predation by birds low in area. (Wis. Ins. Sur.). MINNESOTA - Overwintering mortality very light; averaged 4 percent in west central and 3 percent in southwest districts. In one field in Otter Tail County, woodpecker feeding heavy and reduced borers by over 50 percent. Good survival will not change prediction of low borer population for coming season. (Minn. Ins. Sur.).

SOUTHWESTERN CORN BORER (*Zeadiatraea grandiosella*) - ILLINOIS - Fifty girdled corn plants in Alexander County examined; 2 percent contained living larvae and 60 percent had woodpecker holes. No dead larvae observed. (White).

CORN ROOTWORMS (*Diabrotica* spp.) - NEBRASKA - Egg numbers low in 3 of 4 fields in Saunders County; fields in sorghum in 1965. Egg counts from corn fields 0-33 per pint of soil, showing very wide range of population potential for spring of 1966. (Weekman, Rhine). TEXAS - Larvae of *D. undecimpunctata howardi* attacking root systems of 4-inch high corn in several fields near Beeville, Bee County. Approximately 1 percent of 400-acre field killed. (Spaniel).

CORN FLEA BEETLE (*Chaetocnema pulicaria*) - NEW YORK - Not abundant in summer of 1965 in Hudson Valley but sometimes observed at rates of several per 10 plants. Past winter comparatively mild; treatment of corn at 2-leaf stage may be necessary from Ulster County southward. (N.Y. Wkly. Rpt.).

A WIREWORM (*Melanotus communis*) - FLORIDA - Causing considerable damage to field corn in prison farm at Belle Glade, Palm Beach County. Over 100 acres of corn lost. Damaging sweet corn at Belle Glade. Several growers not satisfied with current controls. (Genung).

SMALL GRAINS

BROWN WHEAT MITE (*Petrobia latens*) - OKLAHOMA - Continues moderate to heavy in wheat in northwest. Ranged 30-500 per linear foot in Major, Alfalfa, Logan and Payne Counties. Common in alfalfa in Alfalfa County. (Okla. Coop. Sur.). COLORADO - Averaged 5 per leaf on wheat in Washington County. (Jenkins).

WINTER GRAIN MITE (*Penthaleus major*) - OKLAHOMA - Increased in wheat and barley in Noble County; damage very evident in some fields. Infestations very "spotty". (Okla. Coop. Sur.). TEXAS - Caused slight damage in small grain fields near Terrell, Kaufman County (Turney), and in many wheat fields throughout panhandle area (Parker).

GRAIN APHIDS - CONNECTICUT - None reported, but expected soon. (Savos, Apr. 13). MARYLAND - *Macrosiphum avenae* increasing; averaged 112 per 100 sweeps on barley at Cambridge, Dorchester County. (U. Md., Ent. Dept.). MISSOURI - *M. avenae* remains low on small grains in southeastern district; 0-35 per foot of row, but increasing. (Houser). TEXAS - *Rhopalosiphum fitchii* moderate to heavy on wheat near McKinney, Collin County, March 25. Currently light and noneconomic in most fields throughout Kaufman County. (Turney).

PALE WESTERN CUTWORM (*Agrotis orthogonia*) - COLORADO - Larvae 0-1 per 3 linear feet of drill row in Weld County wheat; no damage. (Jenkins).

For Other Small Grain Pests, see Federal-State Plant Protection Programs, page 343.

FORAGE LEGUMES

ALFALFA WEEVIL (*Hypera postica*) - CALIFORNIA - Heavy on clover and alfalfa in Marysville, Yuba County; heavy on alfalfa in Elmira, Solano County, and in Roseville, Placer County. Occurrences indicate pest will be widespread and severe this season. Placer County is new county record. (Cal. Coop. Rpt.). IDAHO - Eggs found in Payette County April 8. (Bishop). Adults averaging 1-2 per square rod in alfalfa at Meridian, Ada County, April 6. (Peterson). NEVADA - Some eggs and few first instars present in Lovelock, Pershing County. Major egg laying will occur later. (Arnett, Ferraro). SOUTH DAKOTA - Two adults taken in one-cubic-foot sample of duff and pine needles beneath ponderosa pine tree near Whitewood, Lawrence County, April 9. Collection from slope overlooking alfalfa field. (Jones).

MISSOURI - Larvae in Pemiscot and Mississippi Counties; all stages of development damaging 10-70 percent of plants. All alfalfa fields infested. No pupation observed by April 14. Rains and cool weather hampered survey; larval counts difficult. (Houser, Jones). ARKANSAS - Second period of hatching occurred recently; two ages of larvae present in many eastern area fields. Older larvae pupating; younger larvae feeding on new growth. (Roberts, Miner). MISSISSIPPI - Five samples taken in Holmes County field revealed 78 larvae per square foot. (Dinkins). ALABAMA - Larvae damaging alfalfa in Colbert, Madison, Morgan and Cherokee Counties. Controls initiated in these and other northern counties. (Magnusson et al.). MARYLAND - Adults laying eggs and small larvae active on alfalfa in most sections. Damaged tips ranged 30-40 percent in alfalfa on lower Eastern Shore. Heavy damage to first growth expected during late April in all sections. (U. Md., Ent. Dept.). DELAWARE - Larvae average 2-3 per alfalfa stem in Kent and Sussex Counties; slight increase in injury noted. Majority first instars; some second and third instars present in Sussex County. (Burbutis). NEW JERSEY - No activity noted in Morris County. (Ins.-Dis. Newsltr.). OHIO - Larval populations in southern area appear similar to last week due to cold night temperatures and wet or overcast days. Little plant growth occurred. Larvae averaged 10 per stem in field in Lawrence County; few larvae in other fields in Jackson and Brown Counties. First through third instars present. (Rose). ILLINOIS - Larvae ranged 0-290 (average 102) per 100 sweeps in 5-7 inch alfalfa in the southwest district. Zero to 96 percent of terminals infested by first to third-instar larvae. Damage moderate in Alexander County. No infested terminals found in the east district where alfalfa beginning growth. (White).

CLOVER LEAF WEEVIL (Hypera punctata) - ILLINOIS - Second to fourth instars 0-19 per square foot in red clover 1-1.5 inches tall; 7-12 second to fourth instars in same crop 3-4 inches tall in southwest. No parasitized larvae found in east district; 4 percent of larvae parasitized in southwest, probably by Biolysia tristis (an ichneumon wasp). (White). MISSOURI - Larvae 1-13 (average 4) per square foot in alfalfa in southeast. Damage slight on 25-30 percent of terminals. (Houser). OKLAHOMA - Heavy in alfalfa in some areas of Kiowa County. Light in Payne County. (Okla. Coop. Sur.). IDAHO - Larvae 3 per square rod; feeding in alfalfa April 6 at Meridian, Ada County. (Peterson).

CLOVER HEAD WEEVIL (Hypera meles) - ALABAMA - Larvae continue in crimson clover grown for seed in central counties. Controls initiated in Montgomery, Autauga, Bullock and other counties. (Scott, Stone et al.).

PEA LEAF WEEVIL (Sitona lineata) - CALIFORNIA - Adults swept from vetch in San Ramon, Contra Costa County, March 29, 1966, by T. R. Haig. Det. by R. E. Warner. This is a new State record. (Cal. Coop. Rpt.).

PEA APHID (Acyrthosiphon pisum) - NEW MEXICO - Light on alfalfa throughout State. (N. M. Coop. Rpt.). TEXAS - Varied 50-450 per sweep with 15-inch net in alfalfa throughout Kaufman County. Light on vetch, but increasing, throughout same county; 15-25 per sweep with 15-inch net. (Turney). OKLAHOMA - Ranged 300-500 per 10 sweeps in alfalfa in Kiowa, Tillman and Stephens Counties. Moderate to heavy in many counties in western two-thirds of State, except in panhandle. (Okla. Coop. Sur.). MISSOURI - Remains low in southeastern area alfalfa; 100-500 per 100 sweeps. Few parasitized specimens observed. (Houser). ILLINOIS - Ranged 10-490 (average 300) per 100 sweeps in 5- to 7-inch alfalfa in southwest; 0-2 (average 0.67) percent of aphids killed by parasites. (White). WISCONSIN - Nymphs in second instar in southern counties; a few third instars present on southern slopes where development more advanced. Populations appear low in most fields examined although still too early to make population studies. (Wis. Ins. Sur.). MARYLAND - Generally light on alfalfa in most areas due to cool, wet weather. Winged forms collected on alfalfa in Dorchester County. (U. Md., Ent. Dept.). DELAWARE - Scarce on alfalfa in Sussex County. (Burbutis).

MEADOW SPITTLEBUG (Philaenus spumarius) - OHIO - First nymphs of season collected from alfalfa in Brown County. Very few present. (Rose). MARYLAND - No hatching observed to April 14 on alfalfa and red clover. (U. Md., Ent. Dept.).

TARNISHED PLANT BUG (Lygus lineolaris) - ILLINOIS - Adults 0-6 per 100 sweeps in 5- to 7-inch alfalfa in the southwest district. (White). MARYLAND - Adults 3 per 10 sweeps on alfalfa in Dorchester County. (U. Md., Ent. Dept.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Increasing in alfalfa in Yuma County and in Buckeye area of Maricopa County. Averaged 35 per 100 sweeps. (Ariz. Coop. Sur.).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Increasing in alfalfa in Yuma County and in Buckeye area of Maricopa County. Larvae 90 per 100 sweeps. (Ariz. Coop. Sur.). MARYLAND - Larvae light in alfalfa in Dorchester County. (U. Md., Ent. Dept.).

GREEN CLOVERWORM (Plathypena scabra) - OKLAHOMA - Occasional small larva noted in alfalfa in Payne County. First report of season. (Okla. Coop. Sur.).

VARIEGATED CUTWORM (Peridroma saucia) - MISSOURI - Egg masses swept from alfalfa in Pemiscot County April 6. (Puttler).

YELLOW-STRIPED ARMYWORM (Prodenia ornithogalli) - MISSOURI - One adult taken in blacklight trap at Portageville, Pemiscot County, April 13. First catch of season. (Keaster, Harrendorf, Jones).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Total of 297 live weevils found in 385 square yards of surface trash examined in Wilbarger County. Majority found in communities with numerous shelterbelt plantings; remainder along fence rows, beneath shinnery oak, cottonwood, chinaberry and willow groves, and in leaf and drift trash in cotton fields where stalks not destroyed. (Rummel, Boring).

THRIPS - ALABAMA - Frankliniella tritici, Thrips tabaci and F. fusca present on grasses, legumes, weeds, vegetable and other new growth along fence rows, roads, and ditchbanks on borders of all cotton fields examined. (McQueen).

TOBACCO

FLEA BEETLES - GEORGIA - Very heavy on plants set in field in Tift County. (Girardeau).

CUTWORMS - GEORGIA - Light in Tift County. (Girardeau).

SUGAR BEETS

SEED-CORN BEETLE (Agonoderus lecontei) - COLORADO - Trace numbers of adults on sugar beets; no damage observed. (Jenkins).

FALSE WIREWORMS - NEW MEXICO - Damaging young sugar beets in Curry County. (Crystal).

POTATOES, TOMATOES, PEPPERS

GREEN PEACH APHID (Myzus persicae) - IDAHO - Overwintering summer forms and progeny on bindweed and shepards-purse in Twin Falls County, April 8. If warm weather continues, winged migrants will be present soon. Eggs abundant on peach twigs throughout southern area. Conditions favor development of extremely high numbers in southern area during 1966 unless subsequent weather conditions unfavorable. Extra care urged in selecting seed stocks, especially where net necrosis of potatoes problem in past years. (Bishop).

GREAT BASIN WIREWORM (Ctenicera pruinina) - WASHINGTON - Light on 14 acres of potatoes, damaging seed pieces at Ringold, Franklin County. (Onsager).

COLE CROPS

CABBAGE APHID (Brevicoryne brassicae) - ARIZONA - Moderate to heavy on cabbage in Yuma Valley of Yuma County and in areas of Maricopa County. (Ariz. Coop. Sur.). DELAWARE - Present on young cabbage plants locally in New Castle County. (Burbutis).

ARMY CUTWORM (Chorizagrotis auxiliaris) - ARIZONA - Light in cabbage locally in Yuma Valley, Yuma County. (Ariz. Coop. Sur.).

HAWAII INSECT REPORT

Special Insects of Regional Significance - SOUTHERN GREEN STINK BUG (Nezara viridula var. smaragdula) adults light on mustard cabbage and snap beans in Waianae, Oahu. Increasing where spray program neglected. On Hawaii Island, medium infestations, mostly nymphs, on snap beans in Laupahoehoe and on pumpkins in Hilo. (Yamamoto, Yoshioka). Medium infestation of a PLATASPID BUG (Coptosoma xanthogramma) occurring on Canavalia cathartica (maunaloa) in Kailua and on Strongylodon macrobotrys (jade-vine) in Kaneohe, Oahu. Mostly nymphs of all stages. These are first occurrences on the windward side of the island. (Thistle, Higa).

New State of Hawaii Insect Record - Several adults of a SCOLYTID BEETLE (Stephanoderes birmanus) found in twigs of Litchi chinensis (litchi) in Lawai, Kauai, on October 27, 1965 by S. Au. Adults later collected from Prosopis pallida (kiawe) by C. J. Davis in Waianae, Oahu, on March 9, 1966 and in Kahului, Maui, on March 23, 1966. Det. by S. Wood. According to Dr. Wood, this species is closely allied to S. maculicollis. (Chong).

Deciduous Fruits - BLACK THREAD SCALE (Ischnaspis longirostris) heavy on Haden mango foliage in the Nuuanu area of Honolulu, Oahu. Leaves from 3 trees averaged 115 scales per square inch. (Haw. Ins. Rpt.).

General Vegetables - All stages of IMPORTED CABBAGEWORM (Pieris rapae) medium to heavy in 3 acres of cabbage at 2,000 feet elevation in Kula, Maui. Damage heavy on young plants. Grower behind on spray schedule. (Shigeta). CARMINE SPIDER MITE (Tetranychus telarius) very heavy on eggplant in Kahului; light on eggplant in Puunene on Maui. (Miyahira).

Ornamentals - CHINESE ROSE BEETLE (Adoretus sinicus) caused heavy foliar damage to various ornamental plants in Kaneohe, Oahu, including Hibiscus spp., Heliconia spp., Rosa spp., and Acalypha spp. (Haw. Ins. Rpt.). Dr. Carl Yoshimoto, Bishop Museum, collected a single specimen of a LYGAEID BUG (Nysius caledoniae) in Lanaihale, Lanai, on March 25, 1966. Species known only from the islands of Oahu and Hawaii, this constitutes a new island record. (Ashlock). Several adults of a SCOLYTID BEETLE (Stephanoderes georgiae) found in twigs of Cassia glauca (kolomona) in Kukuiula, Kauai, on January 5, 1966, by S. Au. This is a new island record. Previously reported only from Oahu. Det. by Dr. S. Wood. (Chong).

Miscellaneous Insects - A MIRID BUG (Rhinacloa forticornis) - Two specimens found on Rubus rogersii (blackberry) in Kokee, Kauai, on November 28, 1965, by S. Au. This is a new island record. It was first reported in the State (light trap at Honolulu, Oahu) in June, 1962 by Dr. C. R. Joyce. Det. by Dr. R. C. Froeschner. (Haw. Ins. Rpt.). Several adults of a GEOMETRID MOTH (Cosymbia serrulata) taken at light in Kaunakakai, Molokai, March 18-23, 1966. This is a new island record. (Beardsley).

DECIDUOUS FRUITS AND NUTS

APPLE APHID (Aphis pomi) - INDIANA - First nymphs of season found on apple bud tips in Delaware and Tippecanoe Counties. Bud stage ranges from silver to green tip. (Matthew). SOUTH CAROLINA - Several hours search at Long Creek showed none present. (Buxton, April 11).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OHIO - Eggs hatching in Wayne County. (Forsythe). Large populations noted on apple buds in Hocking County, but relatively lesser numbers in southern part of State. In Lawrence County, apple leaves out and blossoms in pink stage. Limited frost damage occurred. (Rose).

PEAR PSYLLA (Psylla pyricola) - CONNECTICUT - Only insect active at Storrs. Adults easily found; egg laying increased slightly. (Savos, Apr. 13). MICHIGAN - Adults and freshly laid eggs common in Oakland County pear orchard April 12. (Wooley, Lincoln).

EUROPEAN RED MITE (Panonychus ulmi) - NEW JERSEY - Overwintering eggs hatching in Camden County on Red Delicious apples. (Ins.-Dis. Newsltr.). CONNECTICUT - Very few overwintering eggs in all localities. (Savos, Apr. 13).

SPIDER MITES (Tetranychus spp.) - COLORADO - Overwintering mites active on pear and apple trees. Most fruit in delayed dormant stage in Paonia area, Delta County. (Bulla).

PEAR LEAF BLISTER MITE (Eriophyes pyri) - CONNECTICUT - Control urged before buds open. (Savos, Apr. 16).

FRUIT-TREE LEAF ROLLER (Archips argyrospilus) - CONNECTICUT - Some overwintering egg masses found at Cheshire. (Savos, Apr. 13).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - OKLAHOMA - Light to moderate on fruit trees in McIntosh County. (Okla. Coop. Sur.).

SAN JOSE SCALE (Aspidiotus perniciosus) - TEXAS - Light to medium on peach trees near Saratoga, Hardin County. (Martin).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - TEXAS - Heavy on peaches near Saratoga, Hardin County. (Martin).

LYGUS BUGS (Lygus spp.) - COLORADO - Ranged 4-6 per 100 sweeps where tansy mustard bloom present in Mesa County peach orchards; considered light. (Bulla).

A LEAFHOPPER (Erythroneura elegantula) - CALIFORNIA - Adults medium on peach trees in Fowler, Fresno County. (Cal. Coop. Rpt.).

PEACH SILVER MITE (Aculus cornutus) - CALIFORNIA - Light, early infestations on flowering peach trees in Turlock, Stanislaus County. (Cal. Coop. Rpt.).

PECAN NUT CASEBEARER (Acrobasis caryae) - ALABAMA - Small larvae emerged from overwintered hibernaculae on earlier pecan varieties in south and central areas; feeding on tender foliage. (McQueen). TEXAS - Second and third instars in young shoots of pecan trees near College Station, Brazos County. (VanCleave, Parker).

BLACK PECAN APHID (Melanocallis caryaefoliae) - ALABAMA - Nymphs very light on opening buds and tender foliage of earlier pecan varieties in Lee County. No noticeable damage but first of succeeding generation usually not heavy enough to damage until after July. (McQueen).

A XYELID SAWFLY (Megaxyela langstoni) - ALABAMA - Approximately 50 first and second instars feeding on tender foliage of young pecan tree in Lee County. Occasional pest of pecans; reported in Mobile and Lee Counties in April 1964. (Bagby et al.).

CITRUS

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Heavy and damaging citrus in commercial groves and backyard plantings in Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

COTTONY-CUSHION SCALE (Icerya purchasi) - ARIZONA - Numerous infestations on older citrus groves on Yuma Mesa in Yuma County. Rodolia cardinalis (vedalia) very light. (Ariz. Coop. Sur.).

BROWN SOFT SCALE (Coccus hesperidum) - ARIZONA - Infested commercial lemon grove on Yuma Mesa, Yuma County. (Ariz. Coop. Sur.).

EASTERN LUBBER GRASSHOPPER (Romalea microptera) - FLORIDA - Second instars present in colonies; about 40-50 per colony in Lake Alfred area, Polk County, in or near swampy area adjacent to citrus groves. Testing of some chemical controls underway. High concentrate low volume spray not effective in June last year. Large numbers present in 1965 caused some damage to citrus trees. (J. C. Denmark).

For other Citrus Pests, see Federal-State Plant Protection Programs, page 343.

SMALL FRUITS

TWO-SPOTTED SPIDER MITE (Tetranychus urticae) - NEW JERSEY - Egg laying underway in Hammonton area on strawberries. About one-third of infested leaves contained eggs; about 55 eggs per leaf. (Ins.-Dis. Newsltr.).

GENERAL VEGETABLES

A LEAF MINER FLY (Phytomyza atricornis) - CALIFORNIA - Adults heavy on artichokes and lettuce in Watsonville, Santa Cruz County. (Cal. Coop. Rpt.).

ORNAMENTALS

ARMORED SCALES - FLORIDA - Gymnaspis aechmeae and Hemiberlesia palmae severely damaged leaves of Billbergia sp. plants in nursery at West Palm Beach, Palm Beach County. (Long). Parlatoria proteus adults and nymphs infesting flowers and leaves of 6 of 300 plants of moth orchid (Phalaenopsis sp.) in nursery at Tampa, Hillsborough County. (Hale). All stages causing moderate damage to 100 of 1,000 Philodendron panduraeforme plants in nursery at Miami, Dade County. (Swanson). Pinnaspis aspidistrae adults infesting leaves of 10 of 20 plants of lily-turf (Liriope sp.) in Tampa. (Simmons). SOUTH CAROLINA - Fiorinia theae general over State especially on Burford hollies and camellias. (Nettles et al., Apr. 12). TEXAS - F. theae heavy on holly in College Station, Brazos County. (Randolph). CALIFORNIA - Aspidiotus perniciosus heavy on flowering cherry nursery stock in San Jose, Santa Clara County. (Cal. Coop. Rpt.).

BROWN SOFT SCALE (Coccus hesperidum) - FLORIDA - Adults and nymphs infesting flowers and leaves of 50 of 300 plants of moth orchid (Phalaenopsis sp.) in nursery at Tampa, Hillsborough County; all stages causing severe damage on leaves of 10 plants of Aloe sp. in nursery at Tampa. (Hale).

AZALEA WHITEFLY (Pealius azaleae) - ALABAMA - Large numbers emerging from older azaleas in Lee County; overwintered nymphs heavy. (McQueen).

CHRYSANTHEMUM LACE BUG (Corythucha marmorata) - CALIFORNIA - Nymphs and adults medium to heavy on Ambrosia sp. in Placentia, Orange County. (Cal. Coop. Rpt.).

A LYGAEID BUG (Ochrostomus lineoloides) - TEXAS - Large numbers found at base of nursery stock in nursery near Alta Loma, Galveston County. (Gandear).

AZALEA LEAF MINER (*Gracillaria azaleella*) - FLORIDA - Larvae moderate on leaves of 11 plants of 37 *Rhododendron indicum* in nursery at Tampa, Hillsborough County. (Hale).

AN OLETHREUTID MOTH (*Epinotia subviridis*) - CALIFORNIA - Larvae locally heavy on juniper in Campbell, Santa Clara County. (Cal. Coop. Rpt.).

CANKERWORMS - NEW YORK - Lighter attacks on ornamentals predicted on Long Island; parasites reduced egg clusters. May be troublesome on South Fork around East Hampton. (N. Y. Wkly. Rpt., Apr. 18).

A SCARAB (*Euphoria sepulchralis*) - FLORIDA - Chewing blooms of roses and causing substantial damage to approximately 10 percent of 1,000 plants in nursery at Tampa, Hillsborough County. (Barber).

CITRUS RED MITE (*Panonychus citri*) - CALIFORNIA - Medium on elaeagnus nursery plants in Santa Barbara, Santa Barbara County. (Cal. Coop. Rpt.).

FOREST AND SHADE TREES

SPRUCE NEEDLE MINER (*Taniva albolineana*) - NEVADA - Larvae mining new needles in southern Washoe County. No pupae found. Surveys in Winnemucca, Humboldt County, and in Lovelock, Pershing County, negative. (Bechtel, Cooney).

NANTUCKET PINE TIP MOTH (*Rhyacionia frustrana*) - ALABAMA - Emergence from overwintered pupae in pine tips completed throughout State. No noticeable signs of first-generation larvae in new growth pine tips in central part of State; should occur soon. (McQueen).

WHITE-PINE WEEVIL (*Pissodes strobi*) - NEW JERSEY - Control sprays urged; thorough coverage of terminals necessary for adequate control. (Ins.-Dis. Newsltr.).

WHITE-PINE APHID (*Cinara strobi*) - NEW JERSEY - Eggs will hatch soon; spraying of terminals and small branches urged. (Ins.-Dis. Newsltr.).

GALL APHIDS (*Adelges* spp.) - CONNECTICUT - Overwintering nymphs active on spruce in some areas. (Savos). NEW YORK - *A. cooleyi* abundant on Douglas-fir in Loudenville. (N.Y. Wkly. Rpt., Apr. 12).

A SPIDER MITE (*Oligonychus coniferarum*) - CALIFORNIA - Locally heavy on *Juniperus torulosa* trees in Oroville, Butte County. (Cal. Coop. Rpt.).

EASTERN TENT CATERPILLAR (*Malacosoma americanum*) - NEW JERSEY - Eggs hatched April 11 in Hartford area, Burlington County, on wild cherry. (Ins.-Dis. Newsltr.). DELAWARE - Young larvae noted on wild cherry in Sussex County. (MacCreary). MARYLAND - Eggs hatching on wild cherry in southern sections. First larvae of season observed April 7 on wild cherry at Salisbury, Wicomico County. (U. Md., Ent. Dept). MISSOURI - One web per tree observed on occasional wild cherry as far north as Jefferson County. (Houser). OKLAHOMA - Heavy on wild plum trees in Major, Alfalfa and Kingfisher Counties; light to moderate in Murray County. (Okla. Coop. Sur.). ALABAMA - Widespread in northern area on cherry trees and to much lesser extent on apples. Larvae approaching full growth in extreme south. (Rutledge et al.).

CANKERWORMS - MICHIGAN - *Alsophila pometaria* and *Paleacrita vernata* active in many parts of Lower Peninsula on warm evenings during third week of March. Moth activity ceased during cool period of late March and early April. (Newman, Hoffman). NORTH DAKOTA - *P. vernata* males emerging in Fargo area. In 1965, males emerged week of March 27. (Brandvik).

AN OLETHREUTID MOTH (*Proteoteras aesculana*) - DELAWARE - Larvae infested 30 percent of maple trees 6-7 feet tall in nursery; 2-3 tip shoots attacked per infested tree. Collected June 30, 1965, by R. Hickman in Lewes, Sussex County. Det. by P. P. Burbutis. This is new State record. Larvae also known present in nurseries in other areas of State. (Burbutis).

A PLUTELLID MOTH (Abebaea subsylvella) - CALIFORNIA - Larvae heavy on oak trees in Los Altos Hills, Santa Clara County. (Cal. Coop. Rpt.).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OKLAHOMA - Adults emerging from dead elm trees in Stillwater area, Payne County. (Okla. Coop. Sur.).

ELM LEAF BEETLE (Pyrrhalta luteola) - IDAHO - Adults active in Twin Falls County; caused serious damage to elms in 1965. (Youtz).

NATIVE HOLLY LEAF MINER (Phytomyza ilicicola) - MARYLAND - Considerably above normal on American holly in most sections. (U. Md., Ent. Dept.).

A PIT SCALE (Asterolecanium minus) - CALIFORNIA - Heavy on oak nursery stock in San Jose, Santa Clara County. (Cal. Coop. Rpt.).

For other forest and shade tree pests see Federal-State Plant Protection Programs, page 343.

MAN AND ANIMALS

MOSQUITOES - NORTH CAROLINA - No problems in Carteret and Pamlico Counties due to dry conditions of marsh areas. (Ashton). FLORIDA - Aedes taeniorhynchus biting activity generally very light to light in southern area; more abundant in Lee and Collier Counties. Scattered specimens biting at Jupiter Island, Martin County; Homestead and Everglades National Park, Dade County and Cape Sable and Florida Keys, Monroe County. Some larvae taken in brackish pool at Grassy Key, Monroe County. All collections taken second week in April. (Mead). In Gainesville area, Alachua County, Mansonia perturbans made first big appearance of season April 10-15; causing annoyance in several parts of city. Fresh specimens collected in southeastern areas. City fogging service started. Culex salinarius causing some annoyance but much less than M. perturbans. (Fla. Coop. Sur.). LOUISIANA - Larval collections by Jefferson Parish Department of Mosquito Control for period ending April 15 yielded Anopheles crucians, Culex pipiens quinquefasciatus, Culex territans and Culex salinarius. Aedes canadensis and Mansonia perturbans appeared in light trap collections for first time this year. (Stokes). TEXAS - Culex salinarius predominant species in Jefferson County; higher numbers reported from southern portion of county. Aedes sollicitans in moderate to small numbers, more prevalent in Port Arthur. Aedes vexans taken in light traps in Beaumont. Anopheles crucians noted throughout county; A. quadrimaculatus only in Port Arthur and north Beaumont traps. Culiseta inornata continues in all light traps; however, few warm days toward end of March diminished numbers considerably. (Thompson; Jeff. Co. Mosq. Contr. Distr. Rpt.). UTAH - Fourth instar of Culex erythrothorax taken in marshes northwest of Salt Lake City as ice melted in late March. Aedes campestris, A. dorsalis and Culiseta inornata larvae present in Salt Lake County. (Collett, Apr. 11). COLORADO - Third instars of Aedes dorsalis taken at Fort Collins, Larimer County. (Shaw). MINNESOTA - First and second instars of Aedes spp. found in 245 of 258 larval samples collected by Metropolitan Mosquito Control District; 16 samples contained Aedes excrucians, A. stimulans, A. abserratus, A. fitchii and A. riparius. Air temperatures somewhat below normal; larval development slowed. (Minn. Ins. Rpt.).

BITING MIDGES (Culicoides spp.) - FLORIDA - Few C. furens taken during biting at Hobe Sound, Martin County; C. barbosai distinct nuisance during daytime at Middle Cape of Cape Sable, Monroe County. Det. by F. S. Blanton. (Mead).

HORN FLY (Haematobia irritans) - MISSISSIPPI - Averaged 25 per head on 10 cattle in Oktibbeha County; level unchanged. (Dinkins). TEXAS - Ranged 30-40 per head on cattle throughout Brazos County. (Parker). OKLAHOMA - Averaged 200 per head on cows and 600 per head on bulls in McIntosh County. Light to moderate in Murray, Garvin, Choctaw and Payne Counties. (Okla. Coop. Sur.). ARKANSAS - Ranged 75-100 per animal on 2 herds in Yell County and 15 per animal on 1 herd in Washington County. (Simco).

CATTLE GRUBS (*Hypoderma* spp.) - UTAH - Still emerging from dairy cattle in Cache Valley areas. (Olson, Knowlton, Apr.11). OKLAHOMA - *H. lineatum* adults light to moderate and annoying to cattle in McIntosh, Choctaw and Payne Counties. (Okla. Coop. Sur.). TEXAS - *H. lineatum* adults depositing eggs throughout northern area. (Turney).

TICKS - ARKANSAS - *Amblyomma americanum* and *Ixodes scapularis* present on cattle in Washington County. (Simco). OKLAHOMA - *Dermacentor variabilis* adults present on dogs checked in Noble County. Unspecified ticks moderate on cattle in Choctaw and Pushmataha Counties. (Okla. Coop. Sur.). WYOMING - *Dermacentor andersoni* adults active in widespread areas of Washakie County. (Pfadt).

A VESPID WASP (*Polistes* sp.) - ARIZONA - Large populations nesting in palm trees, houses and other buildings throughout Pinal County causing nuisance to many people. (Ariz. Coop. Sur.).

NORTHERN FOWL MITE (*Ornithonyssus sylviarum*) - ARKANSAS - Medium to heavy on laying flocks in Washington County. (Simco)

HOUSEHOLDS AND STRUCTURES

TERMITES - CONNECTICUT - Swarming in East Haven, Branford, North Haven, Hamden, New Haven, West Haven, Bridgeport and Thompsonville. (Savos, Johnson, Apr. 13). ILLINOIS - Swarming in Champaign-Urbana area. (Ill. Ins. Rpt.) TEXAS - *Reticulitermes flavipes* swarming from house in Bay City, Matagorda County, (Vestal); house in Floresville, Wilson County, (Bippert); and several houses in Seguin, Guadalupe County, (Massey).

ANTS - ARIZONA - Increased activity of *Forelius* sp. and *Camponotus* sp. causing extreme problem to many homeowners in Casa Grande area, Pinal County. (Ariz. Coop. Sur.). MARYLAND - *Tetramorium caespitum* workers active in several lawns in Prince Georges County. *Acanthomyops interjectus* swarmed from soil near foundation plants on property in Federalsburg, Caroline County. (U. Md., Ent. Dept.).

STORED PRODUCTS

DRUGSTORE BEETLE (*Stegobium paniceum*) - NEVADA - Heavy in stored products in restaurant storeroom in Reno, Washoe County. (Ting).

For other Stored-Product pests see Federal-State Plant Protection Programs, page 343.

BENEFICIAL INSECTS

LADY BEETLES - MISSISSIPPI - Larvae more numerous in wheat fields in Delta area. Assassin bugs taken in samples in Attala County wheat fields. (Dinkins).

LACEWINGS - ILLINOIS - Adults of *Chrysopa oculata* and brown lacewings ranged 0-6 per 100 sweeps in alfalfa 5-7 inches high in southwest. (White).

A BRACONID WASP (*Lysiphlebus testaceipes*) - TEXAS - Light to medium in small grain fields throughout Kaufman County parasitizing *Schizaphis graminum* (greenbug) but high winds reduced activity. (Turney).

Beneficial Insects in Missouri - Activity surpressed probably due to cool weather. During period ending April 14, damsel bugs, Chrysopa oculata and Orius insidiosus observed. Bathyplectes curculionis collected and determined by B. Puttler in Wright County in August 1965. This is new County record. (Houser).

FEDERAL-STATE PLANT PROTECTION PROGRAMS

CEREAL LEAF BEETLE (Oulema melanopus) - MICHIGAN - First seasonal activity by overwintering adults noted third week of March near Niles, Berrien County; temperatures in 50's several days. No migration from woodlot hibernation sites observed. Few adults noted again April 11; no flight occurred. General migration from hibernation quarters in woodlots and stubble fields near woodlots expected with sustained warm period. Temperatures in 50's and 60's necessary for mass movement. Early emerging beetles expected to move largely to nearby wheat and grass. (Dowdy).

CITRUS BLACKFLY (Aleurocanthus woglumi) - MEXICO - Chemical Control Zone - Second insecticide application on 3,028 trees on 502 properties and first application on 1,376 trees on 250 properties at Linares, Nuevo Leon, completed. Trees sprayed for first time in extension of protection zones around infestations found in February. Biological Control Zone - Light in Municipios Hidalgo and Padilla; inspections in Municipio Guemez negative; 23,145 trees on 156 properties inspected. Spraying of 4,594 trees in grove in Padilla, Tamaulipas, completed. Total of 424,500 specimens of Prospaltella opulenta (a eulophid) received from Tamaulipas and Yucatan for release in Chiapas and Tabasco. Release of parasites needed in 21 properties in 5 States. Chemical treatment applied on 2,000 citrus nursery trees in Villahermosa, Tabasco. (PPC Mex. Reg., Mar. Rpt.).

A FRUIT FLY (Anastrepha suspensa) - FLORIDA - Numbers increased in traps along lower east coast during late March and early April. (Fla. Coop. Sur.).

GRASSHOPPERS - OKLAHOMA - Surveys in rangeland areas of Beaver, Ellis and Roger Mills Counties showed 0.5 egg pod per square foot of soil. Eggs showed slight development. Crop margins in same areas and in Custer County contained one-third egg pod per square foot. Light hatches of Melanoplus sp. noted in Beckham, Custer, Comanche and Stephens Counties. (Okla. Coop. Sur.). MINNESOTA - Checks in west central district revealed only Melanoplus femurrubrum eggs; most in clear stage. Some egg pods located on favorable sites showed early coagulation. Bee fly larvae destroyed 20 percent of egg pods in Otter Tail County field. (Minn. Ins. Rpt.). NORTH DAKOTA - Egg development in southeast ranged coagulated to segmented with 55 percent of eggs coagulated, 33 percent eyespot and 12 percent segmented. Species involved: Melanoplus femurrubrum and M. bivittatus. (Brandvik). WYOMING - Small numbers of first instars in waste area of southern Big Horn and Washakie Counties. (Pfadt). IDAHO - First and second instars of Oedaleonotus enigma averaged 9 per square yard in Snake River Canyon between King Hill and Bliss, April 7. Spotted hatching of Psoloessa delicatula noted near Mountain Home and Glenns Ferry, Elmore County; fourth instars near Mountain Home March 29. (Evans).

GYPSY MOTH (Porthetria dispar)- NEW YORK - Another heavy infestation predicted in Nissequogue area, Suffolk County. (N. Y. Wkly. Rpt., Apr. 18).

KHAPRA BEETLE (Trogoderma granarium) - CALIFORNIA - Very light infestation of larvae discovered in feedlot in Brawley, Imperial County. Source of infestation being checked. This first known infestation in State in more than 4 years. Quarantine interceptions are continuing threat for this pest to Western Hemisphere. Eradication treatment for new infestation being processed. (Cal. Coop. Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - MEXICO - Inspection of 835 traps in Baja California and Sonora negative. (PPC Mex. Reg., Mar. Rpt.).

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period April 10-16 a total of 9 cases was reported in the Southwestern Eradication Area by States and counties as follows: TEXAS - Willacy 1, Bee 1; ARIZONA - Santa Cruz 1, Yuma 1, Cochise 3, Pima 1; NEW MEXICO - Grant 1. The Republic of Mexico reported 71 cases: Territorio sur de Baja California 1, Chihuahua 3, Sonora 56, Tamaulipas 8, Nuevo Leon 3. Sterile screw-worm flies released: Texas 9,306,250, Arizona 10,928,000, New Mexico 3,300,000 and Mexico 76,432,000.

	Positive Cases		Negative Cases		Ratio of Positive Cases to 100 Cases Negative	
Year	Current	Cumulative	Current	Cumulative	Current	Cumulative
Table 1. Comparison of specimens reported during corresponding week in 1964 and 1965 in Southwestern Eradication Area. (1966 area figures include cases reported from Arizona and/or California; 1965 figures reflect those from the 5-State area).						
1964	3	22	251	1450	1.19	1.51
1965	5	9	294	1038	1.70	0.86
1966	9	42	141	613	6.38	6.85
Table 2. Comparison of specimens reported during corresponding week and in a corresponding area in 1965 in the United States-Mexico Barrier Zone.*						
1965	75	704	65	473	115.38	148.83
1966	78	658	63	427	123.80	154.09

Mexico Field Study - No report received for this period.

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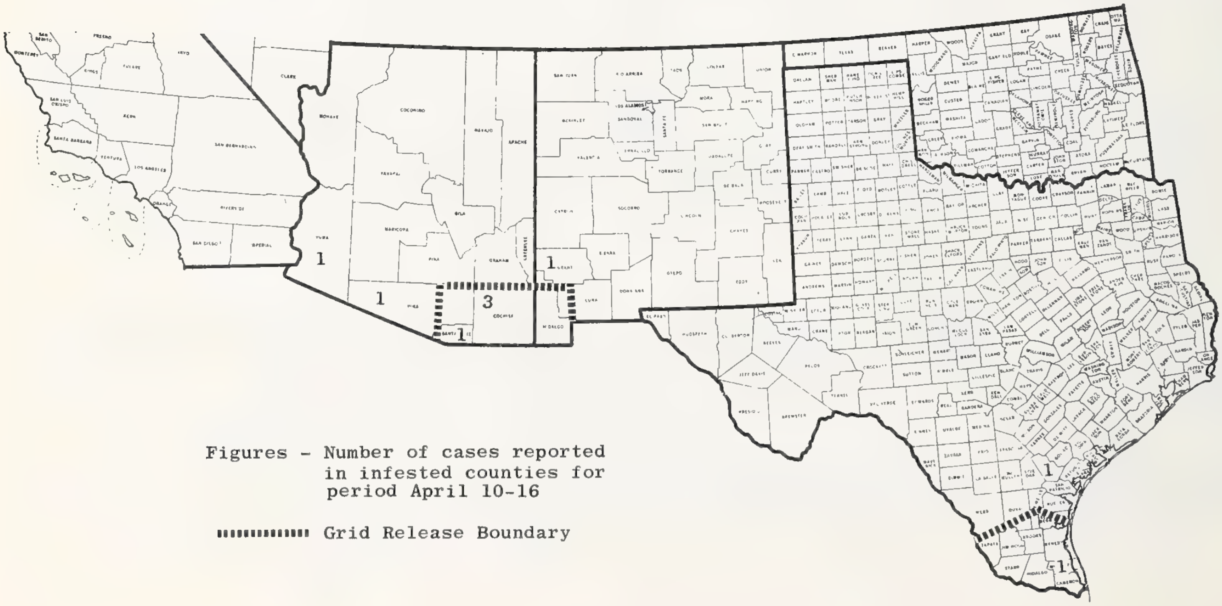
* Barrier Zone - Area in which screw-worm eradication operations are being carried out in an effort to prevent establishment of self-sustaining screw-worm populations in the United States. (Anim. Health Div.).



Figures - Number of cases reported in infested counties for period April 10-16

▮▮▮▮▮▮▮▮▮▮▮ Grid Release Boundary

CORRECTIONS

CEIR 16(8):140 - SUNFLOWER AND FLAX INSECTS - Note for PAINTED LADY (Vanessa cardui) should read NORTH DAKOTA.

CEIR 16(13):254 - Pest Control Accomplishments - Delete entry on jack-pine budworm (Choristoneura pinus) in Michigan. This was a proposed project but was not carried out. (USFS).

See also corrected Summary of Insect Conditions in NEW HAMPSHIRE and VERMONT pages 351-353 this issue.

SOME FIRST APPEARANCES OF SEASON

Pale western cutworm larvae in Colorado. Meadow spittlebug nymphs in Ohio and Maryland. Green cloverworm larvae in Oklahoma. Yellow-striped armyworm adult in Missouri. Apple aphid in Indiana. Pear psylla adults and eggs in Connecticut and Michigan. Eastern tent caterpillar larvae in Maryland. Alfalfa weevil adults in Idaho and South Dakota and larvae in Nevada.

INSECT DETECTION

PEA LEAF WEEVIL (Sitona lineata) - CALIFORNIA - Adults swept from vetch in San Ramon, Contra Costa County, March 29, 1966, by T. R. Haig. Det. by R. E. Warner. New State record. (Cal. Coop. Rpt.). (p. 335).

AN OLETHREUTID MOTH (Proteoteras aesculana) - DELAWARE - Larvae infested 30 percent of maple trees in nursery in Lewes, Sussex County. Collected June 30, 1965, by R. Hickman. Det. by P. P. Burbutis. This is new State record. Also known from other nurseries in other areas of State. (Burbutis). (p. 340).

A SCOLYTID BEETLE (Stephanoderes birmanus) - HAWAII - Several adults found in twigs of Litchi chinensis in Lawai, Kauai, October 27, 1965, by S. Au. Det. by S. Wood. This is new State record. Adults also collected from Prosopis pallida on islands of Oahu and Maui. (Chong). (p. 337).

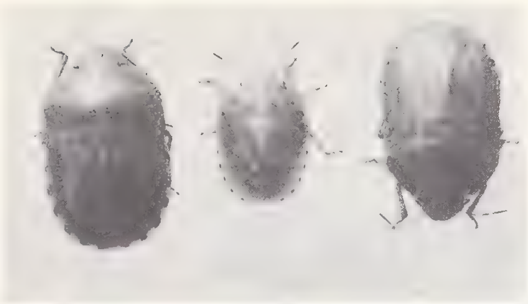
ALFALFA WEEVIL (Hypera postica) - CALIFORNIA - Heavy on alfalfa in Roseville, Placer County. New county record. (Cal. Coop. Rpt.). (p. 334).

AN ICHNEUMON WASP (Bathyplectes curculionis) - MISSOURI - Collected in Wright County in August 1965. Det. by B. Puttler. New county record. (Houser). (p. 343).

KHAPRA BEETLE (Trogoderma granarium) - CALIFORNIA - Very light larval infestation discovered in feedlot in Brawley, Imperial County. First known infestation in State in more than 4 years. Source of infestation being checked. Eradication treatment for new infestation being processed. (Cal. Coop. Rpt.). (p. 343).

In Hawaii, new island records included: A LYGAEID BUG (Nysius caledoniae) on Lanai; a SCOLYTID BEETLE (Stephanoderes georgiae) and a MIRID BUG (Rhinacloa forticornis) on Kauai; and a GEOMETRID MOTH (Cosymbia serrulata) on Molakai. (p. 337).

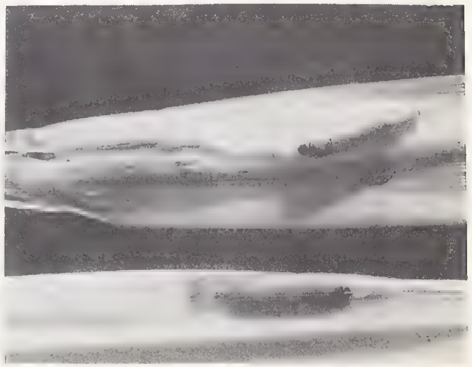
LOOK FOR THESE IN SMALL GRAINS



Senn Pest Look for an oval, tan to brownish stink bug on heads or stems of small grains. Margins of adult abdomen have alternating dark and light areas. This insect can be easily seen but often drops quickly to the ground when disturbed. Can be taken readily in a sweep net. Often congregates under windrows of straw or other collections of debris.

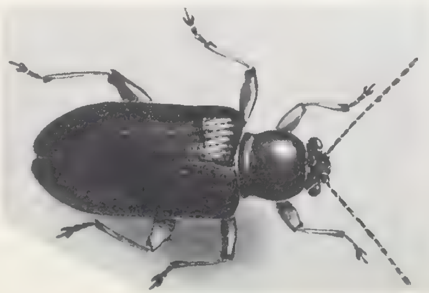
Hosts include wheat, barley, rye, oats, millet, sorghum, spurge, sunflower, flax, clover and thistle. This pentatomid occurs in Afghanistan, Crete, Greece, Iran, Cyprus, Iraq, Israel, Jordan, Lebanon, West Pakistan, Syria, Turkey, and USSR (southern). Eurygaster integriceps Puton is one of the most destructive pests of grain in the Middle East. Adults feed on stems of young plants and adults and nymphs damage kernels. Entire wheat crops may be destroyed; yield is often reduced 25 percent or more. Senn pest also affects quality of flour and germination. Heavy damage has been reported from areas of USSR. For more details see CEIR 7(5):88.

Cereal Leaf Miner Yellowed or brown patches in grain fields may be indicative of presence of Syringopais temperatella (Led.). This lepidopterous miner feeds within the leaves, leaving the epidermis transparent. Larvae are about 5 mm. in length when full grown, and grayish yellow in color. Wing expanse of moth is from 12-18 mm. Forewings are brown, thorax and abdomen black.



Wheat, barley, and oats are preferred hosts. The pest occurs in Cyprus, Turkey, Lebanon, Syria, Jordan, Iraq, Israel, and Iran. Larvae mine leaves from November to April; may kill entire plantings. Major pest of cereals in Middle East; annual loss in Jordan 15-20 percent; 20-25 percent in Turkey; severe losses reported from other areas. As many as 60-90 larvae per plant have been reported in Iran. For more details see CEIR 9(38):873.

Senn pest and cereal leaf miner are not known to occur in the United States.



Cereal Leaf Beetle Presence of this introduced pest in grain fields may be first apparent from a streaked appearance of the leaves. In heavy infestations, plants appear yellowish white. Adults of Oulema melanopus (L.) are approximately 5 mm. in length. Wing covers and head are metallic, bluish black. Legs and thorax light reddish brown. Larva is a little longer than adult. It is yellowish, with brownish black legs. Coloring is obscured by a covering of fecal matter. Adults may be taken in sweep nets on warm spring days.

This chrysomelid attacks small grains and other grasses. Distribution includes Tunisia, Turkey, Cyprus, Israel, Iran, Morocco, and Europe east to Siberia. Also occurs in a small area of U. S. and has been reported in Canada. Serious damage to small grains has been reported in areas of Europe, and in areas of Michigan where the insect was discovered in 1962. The pest now occurs in wide areas of Michigan, Indiana, and Ohio; also reported from 3 counties in northeast Illinois. A cooperative State-Federal control program is in operation against the pest.

Coop. Econ. Ins. Rpt. 16(16):346

LIGHT TRAP COLLECTIONS

	Tempera-ture °F.	Precip-itation (inches)	Type of trap BL = blacklight I = incandescent MV = mercury vapor O = other	Agrotis ipsilon (black cutworm)	Carpocapsa pomonella (codling moth)	Chorizagrotis auxiliaris (army cutworm)	Estigmene acrea (salt-marsh caterpillar)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Loxostege commixtalis (alfalfa webworm)	Loxostege similalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Prodenia ornithogalli (yellow-striped armyworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 4/12			BL						4															
GEORGIA																								
Tifton 4/6-13	42-76	0.05	BL								3													
MISSISSIPPI																								
Stoneville 4/7-13	39-80	0.07	2BL	58			4		9									313	8	1025				
Rolling Fork 4/7-13	41-79		BL	12			3		1		6							41	2	41				
Tunica 4/7-13	35-79	0.22	BL	1			1											18		14				
MISSOURI																								
Portageville 4/9-15			BL															76	1	97				
TENNESSEE (Counties)																								
Madison 4/5-11				3														9	6	14				
Maury 4/5-11																		5		12				
Robertson 4/5-11				1														2	1	10				
Cumberland 4/5-11				1														1		1				
Knox 4/5-11																		4	12					
TEXAS																								
Brownsville 4/9-15	63-86	0.38	2BL	27			5		223	1	53				4			39	4	29		2	40	
Waco 4/9-15			BL	13			12		14		2							12		27				

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1965

WEATHER OF THE YEAR 1965 [1]

Highlights:

(1) Floods in Pacific Northwest in January. (2) Record-breaking spring floods in upper Mississippi Valley, Red River of the North, and portions of the Great Plains. (3) Frequent tornadoes. (4) Longest drought in history of Northeast. (5) Good snowfall in western mountains. (6) Most damaging hurricane on record. (7) Cool summer (8) Wet September. (9) Favorable weather for bumper crops.

TEMPERATURES: Temperatures for 1965 averaged below normal over about 75 percent of the 48 States. Relative to normal the year was coldest in the lower Appalachian region and between the Great Lakes and Rockies. In parts of the latter area the year was more than 2° colder than normal. Below normal temperatures generally prevailed in the northern Great Plains until October. The lowest temperature in the 48 States, -50°, occurred at Cook and Cotton in northeast Minnesota January 14. The 1964-65 winter at some locations in the northern Great Plains was the coldest since 1936. Degree days, a good indicator of fuel consumption, were well above normal from eastern Georgia to southern New England, thence westward along the northern border to the Rockies, and in central California. The year was warmer than normal in southern Florida, south central areas, and in parts of the Pacific Northwest. In the latter area only May, September, and December were colder than normal. Highest temperature in the 48 States was 120° at Maricopa, Arizona, on July 31.

Temperature highlights, in addition to the cold winter in the northern Plains included the following: June was the coldest in many years in the Southwest and parts of the Southeast. July was persistently cool in the Great Lakes region and Northeast with frost and freezing on the 6th and 7th in parts of Michigan and northern and central sections of New York and New England. Near to locally record-breaking low temperatures for August occurred on the 29th to 31st in sections of the Ohio Valley, and locally from the Carolinas to Maine with widespread early frost and freezing in New England. September was the coldest of record at a number of stations in the northern Great Plains and Far West. Temperatures rose to record or near record high levels at the end of July in the Pacific Northwest and in mid-August in the Great Plains.

PRECIPITATION: Precipitation for 1965 in the 48 States was below normal in much of the Pacific Northwest and east of a line joining Cleveland, Ohio, and the southwest corner of New Mexico. Totals were less than 75 percent of normal in the Rio Grande Valley and north Atlantic coastal sections.

By far the most serious precipitation deficiencies occurred in the Northeast where they prolonged a dry period that began in the area during September 1961, developed extreme drought characteristics by the end of September 1964, and spread southward during 1965. At the end of the year the drought was rated extreme in northern West Virginia, northern and eastern Virginia, Maryland, Delaware, New Jersey, eastern Pennsylvania, southeastern New York State, and central and southern New England. Owing to good distribution and timely occurrence during the warm season, the precipitation that did occur was sufficent to produce mostly fair to good crops. Reservoir and gound-water supplies reached record low levels, however.

Even though precipitation in the Pacific Northwest was below normal for the year, heavy rains and melting snow in northern California and western Oregon and Washington in January produced the year's worst flood. Losses included about 45 deaths and approximately a half billion dollars damage.

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[1] Prepared by H. L. Seamon, Climatologist, Environmental Data Service, Environmental Science Service Administration, Washington, D. C.

Precipitation was well above normal in a broad belt from the Far Southwest to the Great Lakes, and one of the wettest years on record in the Far Southwest and upper Mississippi Valley. Waterloo, Iowa, measured 50.79 inches of moisture for its wettest year. Warm season precipitation (April-September) also was above normal everywhere, except the Columbia River and Rio Grande Valleys, the east Texas coast, and the Northeast.

Record-breaking spring floods occurred along the upper Mississippi River for a distance of 700 miles as a result of heavy March and April rains and the rapid melting of a record-breaking March snowfall on frozen ground. Severe flooding alalso occurred along portions of the Missouri and Red River of the North. Total losses included at least 15 fatalities and over $100 million property damage.

Heavy June rains in eastern Colorado and the central Great Plains caused severe to record flooding on the South Platte and upper Arkansas Rivers. Several lives were lost and preliminary property losses were estimated at more than $200 million in the South Platte Basin alone.

Many flash floods occurred during the spring and summer in the western half of the Country. One of the worst was on June 11 at Sanderson, Texas, where losses included 24 deaths and a few million dollars property damage.

Numerous other periods of heavy rainfall occurred during the year. June and July rainfall was unusually heavy in the Southeast. Heavy August rains fell in northern and middle portions of the Far West. More than twice the normal rain fell during September in most areas from the Great Basin eastward to the Great Lakes and Ohio River. During the passage of hurricane Betsy, heavy rains fell in extreme southern Florida on September 8 and in the lower Mississippi and Ohio Valleys during the next 4 days.

Tropical storm Debbie left a record 16.85 inches in downtown Mobile, Alabama, September 29 and 30.A record 42 inches of rain fell in the Ft. Lauderdale, Florida area in October, mostly on the 14th-15th and 30th-31st. In southern California rainfall during storms on November 14 to 18 and 22 to 25 totaled 10 inches in Los Angeles and up to 16 inches in nearby mountains, with resulting floods, washouts, and mudslides blamed for at least 4 deaths and heavy damage. Heavy rains and melting snow in southeastern Arizona December 22 and 23 were responsible for millions of dollars damage from washing and flooding.

SNOWFALL: Snowfall for 1965 was near to below normal in the West, and much above in the upper Great Lakes region and parts of the Northeast and Middle Atlantic States, except near the coast. Several heavy snowstorms in the eastern half of the Country during the first 3 months of the year hampered transportation and caused other hardships usually experienced during these storms. Some of the worst of these included the following: (1) January 16-17 in the Appalachians and Middle and North Atlantic Coastal States, (2) January 23-24 in the middle Mississippi Valley northeastward, (3) February 23-25 from middle Mississippi Valley through the Great Lakes and Northeast, (4) March 16-18 in northern Great Plains, upper Mississippi Valley, and Great Lakes.

Snowfall in the Far West together with above normal rainfall and above normal reservoir storage water, furnished adequate irrigation water. Skiing conditions were excellent.

SEVERE STORMS: The year 1965 had more than its share of storminess. A record number of tornadoes, 898, killed 299 persons, injured over 4,000 more, and caused property damage of over $1 billion. The highlight of the tornado season occurred on April 11-12 (Palm Sunday Outbreak) when at least 47 of these storms killed 257 persons, injured over 1,500 others, and damaged property in excess of $200 million.

Betsy the most destructive hurricane, propertywise, in United States history crossed extreme southern Florida on September 8, crossed the Gulf to Louisiana and moved up the Mississippi Valley September 9-10. Damage totaled about

$1,420,000,000, and the storm was blamed for more than 70 deaths.

In addition to tornado and hurricane losses, damage from winds, hail, and lightning was unusually heavy.

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Included in the "Summary of Insect Conditions in the United States - 1965" are the following special reports:

1. Summary of Fruit Insect Conditions, 1965, New York-New England Fruit Spray Specialists' Conference, compiled by L. W. Boulanger, Maine Agricultural Experiment Station, from the conference held at Concord, New Hampshire, October 26-27, 1965.

2. The highlight section of Forest Insect Conditions in the United States - 1965, compiled by the Forest Service, U. S. Department of Agriculture.

Correction: Due to an error in the preparation of previous sections of the summary material, many of the Vermont notes were included under New Hampshire. In an attempt to correct this condition, the Vermont and New Hampshire summaries for the 1965 season are carried in this issue in their entirety. All references to these two States in other sections of the 1965 summary should be disregarded.

VERMONT

Prepared by J. W. Scott

Cereal and Forage Insects: ALFALFA WEEVIL (*Hypera postica*) continued to move northward in the State into Fairfax and East Fletcher, Franklin County, on the west side of the State. The northern boundary for the remainder of the State is roughly a line from Monkton Ridge southeast to Rochester and Royalton on the Connecticut River. Damage to alfalfa was not as great as expected, although some fields in Benson received as much as 50 percent injury. Overall average percent of plants infested by EUROPEAN CORN BORER (*Ostrinia nubilalis*) was 5.6 percent in 1965, an increase over the 4.3 percent infested in 1964. POTATO LEAFHOPPER (*Empoasca fabae*) was exceptionally heavy on alfalfa. CUTWORMS were also exceptionally heavy on alfalfa and other legumes in Windsor County.

Truck Crop Insects: SEED-CORN MAGGOT (*Hylemya platura*) destroyed 60 percent of dry beans in Ferrisburg. GARDEN SLUGS destroyed crops in several gardens. POTATO LEAFHOPPER damaged beans occasionally, and various FLEA BEETLES attacked crucifers, tomatoes and potatoes. Unspecified CUTWORMS were exceptionally heavy on a wide variety of vegetable crops, including asparagus. Damage by CABBAGE MAGGOT (*Hylemya brassicae*) was unusually heavy in the Burlington area, eliminating a crucifer planting in one instance. ROSE CHAFER (*Macrodactylus subspinosus*) populations were abundant in many sections of the State, feeding on vegetable crops.

Fruit Insects: Infestations of EUROPEAN RED MITE (*Panonychus ulmi*) and APPLE MEALYBUG (*Phenacoccus aceris*) were heavy in orchards. Unspecified CUTWORMS fed on apple foliage, and populations of APPLE MAGGOT (*Rhagoletis pomonella*) were high, especially in abandoned blocks. TARNISHED PLANT BUG (*Lygus lineolaris*) populations were higher than usual in orchards, and were exceptionally heavy on raspberries and strawberries.

Forest, Ornamental and Shade Tree Insects: A FRUIT-TREE MITE (Bryobia rubrioculus) and EUROPEAN RED MITE (Panonychus ulmi) infested mountain-ash and ornamental fruit trees. ELM LEAF BEETLE (Pyrrhalta luteola) infestations were heavy in Rutland, Middlebury, Brattleboro, Lyndonville and St. Johnsbury. Infestations were light in Chester and scattered in Burlington. CUTWORMS fed on flowers, young trees and other nursery stock. EASTERN TENT CATERPILLAR (Malacosoma americanum) populations were heavy and scattered throughout the State. Some field infestations of MAPLE BLADDER-GALL MITE (Vasates quadripedes) were observed, and there were more individual complaints concerning this pest than usual. A few very heavy infestations of WOOLLY ALDER APHID (Prociphilus tessellatus) were reported on soft maple. JAPANESE BEETLE (Popillia japonica) populations were very low during the 1965 season. Considerable numbers of ROSE CHAFER (Macrodactylus subspinosus) fed on ornamentals. SATIN MOTH (Stilpnotia salicis) infested aspen and other poplars on the shore of Lake Champlain in the vicinity of Burlington as well as at Bradford and Newport. Although not significant, defoliation by FOREST TENT CATERPILLAR (Malacosoma disstria) occurred; the prevalence of larvae during the summer and appearance of considerable numbers of egg masses indicate population buildup and point to impending trouble from this pest. BEECH SCALE (Cryptococcus fagi), first detected in the Green Mountain National Forest in 1955, has become generally distributed throughout the State during the past decade. The accompanying fatal nectria phase of the insect-disease complex, originally found at only 2 locations, has apparently been slow in following primary infestations of C. fagi until this year. Possibly enhanced by moisture stresses of drought, Nectria coccinea (var. faginata) figuratively blossomed in most C. fagi infestations this season. It is interesting to note that beech trees appearing chlorotic and thin-crowned from the air the past summer were invariably found to be infected by nectria. PINE LEAF CHERMID (Pineus pinifoliae) was moderate on the alternate host, red spruce, during the spring of 1965, but the mobile form failed to migrate successfully to white pine in any great numbers. RED-HEADED PINE SAWFLY (Neodiprion lecontei) caused greater than usual damage to red pine in several plantations.

Insects Affecting Man and Animals: FACE FLY (Musca autumnalis) populations were high in all areas, averaging 20-35 per animal statewide. Spring flood pool MOSQUITOES were particularly annoying in spite of drought conditions. BLACK FLIES were heavy in the spring, creating annoyance to early season woodland visitors. HOUSE FLY (M. domestica) populations were heavy in suburban areas of Burlington. HORN FLY (Haematobia irritans) ranged 75-100 per animal in the Burlington areas.

Household and Structural Insects: CLUSTER FLY (Pollenia rudis) remained troublesome in some new and old houses. There were more reports concerning EUROPEAN EARWIG (Forficula auricularia) during 1965 than during 1964, but no damage was indicated. LARDER BEETLE (Dermestes lardarius) continued to be reported in homes and camps, and BLACK CARPENTER ANT (Camponotus pennsylvanicus) continued to be a problem in homes. CLOVER MITE (Bryobia praetiosa) was reported to have entered homes.

Beneficial Insects: AN ENCYRTID WASP (Ooencyrtus kuwanai) was found infesting egg masses of Porthetria dispar (gypsy moth).

NEW HAMPSHIRE

Prepared by J. G. Conklin

Cereal and Forage Insects: CUTWORMS constituted the most serious insect problem during the season. Climbing species were particularly troublesome statewide. Sphaelotis spp., Septis spp. and Euxoa spp. were dominant. Although light trap collections in the fall of 1964 indicated continued outbreak of ARMYWORM (Pseudaletia unipuncta) in 1965, this outbreak did not materialize; the pest was found only occasionally during the season. ALFALFA WEEVIL (Hypera postica) extended its range to include all counties except Coos and Carroll. The pest was readily found in most alfalfa examined, but commercial damage has not yet become significant.

Fruit Insects: EUROPEAN APPLE SAWFLY (*Hoplocampa testudinea*) was found in the State for the first time during 1965. EASTERN TENT CATERPILLAR (*Malacosoma americanum*) was more troublesome than usual in orchard areas. APPLE MEALYBUG (*Phenococcus aceris*) is apparently on the increase in the State and appeared in troublesome numbers in supposedly well-kept orchards. APPLE MAGGOT (*Rhagoletis pomonella*) and BLUEBERRY MAGGOT (*R. mendax*) were less troublesome than usual.

Truck Crop Insects: CUTWORMS constituted the major problem to these crops during the 1965 season.

Forest, Ornamental and Shade Tree Insects: An outbreak of HEMLOCK LOOPER (*Lambdina fiscellaria*), apparently begun in 1964, continued in 1965 but was controlled. There were some indications of a FOREST TENT CATERPILLAR (*Malacosoma disstria*) buildup, as the pest was rather common in widely scattered areas. MAPLE BLADDERGALL MITE (*Vasates quadripedes*) was common and BIRCH LEAF MINER (*Fenusa pusilla*) was generally troublesome throughout the State. Defoliation by GYPSY MOTH (*Porthetria dispar*) was noticeable, particularly in southwestern portion of State; annual survey indicated noticeable defoliation on approximately 8,451 acres. LARCH SAWFLY (*Pristiphora erichsonii*) is apparently on the increase in the State; noticeable defoliation was reported in plantations during 1965.

Insects Affecting Man and Animals: TICKS were about as troublesome as usual. YELLOW JACKETS were unusually numerous and troublesome.

Household Insects: BOXELDER BUG (*Leptocoris trivittatus*) caused numerous complaints from householders, particularly in Manchester and Concord. CLOVER MITE (*Bryobia praetiosa*) was again generally troublesome statewide. EUROPEAN EARWIG (*Forficula auricularia*) continued troublesome during 1965, particularly in the southern two-thirds of the State. Heavy infestations of WHARF BORER (*Nacerdes melanura*) were encountered at Manchester and Berlin.

Weather continued from page 323.

are also called for in the Southern Border States from the southern Plateau in the West to the lower Mississippi Valley. On the other hand, above normal amounts are indicated for the Pacific Northwest and the northern Plains as well as the upper Mississippi Valley. In unspecified areas near normal precipitation is predicted.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D. C. 20250. Price $5.00 a year.

WEATHER OF THE WEEK ENDING APRIL 18

HIGHLIGHTS: (1) Beneficial rains, Corn Belt and central Appalachians. (2) Northern Plains snowstorm at weekend.

TEMPERATURES: Average temperatures were typical of mid-spring, except rather cool in the middle Atlantic area. In central sections, strong warming sent temperatures to 70° at Fargo, North Dakota, on Friday, but cold Canadian air brought 23° to Bismarck on Sunday. A brief spell of desert heat reached the California coast with 95° at Los Angeles and Santa Maria on Friday. Temperatures averaged near normal in the Deep South where much of the spring has been cool and late.

PRECIPITATION: Very helpful rains fell in a previously dry area extending from Missouri eastward to the Maryland and Delaware coast. Arkansas was also benefited but rains in eastern Texas were excessive including 6.55 inches at Houston. Rains were very light in the Northeast where the drought worsened. It was the 6th dry week in the Texas High Plains and the Southwest continued to be dry. While the eastern slopes of the Rockies received beneficial snows, most other areas extending from central Washington and Oregon eastward to New England received only light precipitation. (Summary supplied by Environmental Data Service, ESSA).

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